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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,743

05/26/2006

Hermann Klingels

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9343

23280 7590 01/21/2009  
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EXAMINER

KIM, TAE JUN

ART UNIT

PAPER NUMBER

3741

MAIL DATE

DELIVERY MODE

01/21/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/28/2008 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21, 25-29, 35, 39-41 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: for claims 21, 40, 41 there is no structure for the power to be drawn from the shaft to the first electrical generator, e.g. a gear. For claim 21, there is no structure for the second generator to be capable of generating mechanical shaft power drawn from the core engine via the shaft (19), e.g. a gear & clutch. A generator by itself cannot perform these functions. For claim 40, there is again no structure (e.g. a gear & clutch) for the second

generator to be capable of generating mechanical shaft power drawn from the core engine via the shaft in the higher load range. A generator by itself cannot perform these functions. These are merely statements of desired results but there is no structure to accomplish them. For claim 41, there is no structure (e.g. a valve) by which the controller can disconnect and connect the electrical generator from the compressed air. There is again just a desired result. A controller by itself cannot perform these functions without something to operate on to effect the change.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21, 25-29, 35, 39-41, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Leeson (5,285,626) in view of Coffinberry (5,143,329). Leeson teaches a gas turbine, comprising a core engine [inherent] including a high pressure compressor and a shaft connected thereto for driving said high-speed pressure compressor; an electrical power generator 71 connected to the shaft generating electrical power from the shaft via the gearbox 83, the electrical power generator further including an air turbine e.g. 32 receiving compressed air 25 drawn from the high pressure compressor to generate electrical power, the electrical power generator including a first

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generator 71 connected to the shaft via the gearbox 83, the first generator generating electrical power from the mechanical shaft power drawn from the core engine via the shaft, the electrical power generator further including a second generator/alternator 56 connected to an air turbine 32, the air turbine generating mechanical power from the compressed air, and the second generator 56 generating electrical power from the mechanical power generated by the air turbine 32 and is capable of generating electrical power from the core engine via the shaft, as any other generator would be able to, the electrical power generator is inherently capable of generating electrical power in a high load range of the core engine exclusively from mechanical shaft power drawn from the core engine via the shaft/gearbox 83, as the accessories of 32, 60, note that the controllers 36 allows for shutdown of the accessory group 60 at any time (see col. 5, lines 21+); wherein the electrical power generator generates electrical power in a lower load range of the core engine from the mechanical shaft power drawn from the core engine via the shaft/gearbox 83 and from pneumatic energy contained in the compressed air 25; a controller e.g. 36, wherein the controller, as a function of the load range of the core engine, automatically connects or disconnects the electrical power generator from the compressed air; the first generator 71 connected by a first gear, e.g. in gearbox 83; the second generator connected to the air turbine via a second gear 54 (see col. 5, lines 57-63); wherein the first 71 and second generators 56 are decoupled in a lower load range of the core engine, the first generator being driven exclusively by the shaft and the second generator being driven exclusively by the air turbine. Leeson does not teach the

compressed air is from the high pressure compressor of the core engine as he does not disclose the details of the engine nor the compressor configuration. Coffinberry is cited to show that it is old and well known in the art to employ a core engine having a high pressure compressor 20 with compressed air 56 (Fig. 1) drawn from the high pressure compressor, the high pressure compressed air used to drive the air turbine 50 connected to a gearbox 48 and accessories 62. It would have been obvious to one of ordinary skill in the art to employ the compressed air from the high pressure compressor of a gas turbine core engine, as taught, by Coffinberry, as a conventional engine location and engine configuration used in the art for producing the compressed air used to drive an air turbine. The indefinite language of claims 21, 40, 41 has been given little patentable weight as applicant only tries to claim a desired result without the means to put it in practice.

6. Claims 21, 25-32, 35, 39, 40, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schutze (4,077,202) in view of Coffinberry (5,143,329) and Lampe (5,174,109). Schutze teaches a gas turbine, comprising a core engine 1 including a compressor and a shaft connected thereto for driving said compressor; an electrical power generator 7 generating electrical power from the shaft and from compressed air drawn from the compressor; and including an air turbine 12 receiving compressed air 16 receiving compressed air drawn from the high pressure compressor to generate electrical power, the electrical generator including a second generator 7 connected to the air turbine, the air turbine 12 generating mechanical power from the compressed air and

capable of generating electrical power from the mechanical power generated by the air turbine 12 (see col. 2, lines 60-37) or alternatively the mechanical power drawn from the core engine by the shaft 2; wherein the electrical power generator generates electrical power in a high load range of the core engine exclusively from mechanical shaft power drawn from the core engine via the shaft (note that both the air turbine 12 and gas turbine 5 are shut down after start, see col. 4, lines 8-36 and only the shaft 2 generates electricity); wherein the electrical power generator generates electrical power in a lower load range of the core engine from the mechanical shaft power drawn from the core engine via the shaft 2 and from pneumatic energy contained in the compressed air 16; further comprising a controller (inherent), wherein the controller, as a function of the load range of the core engine, automatically connects or disconnects the electrical power generator from the compressed air. Schutze does not teach the compressed air is from the high pressure compressor of the core engine as he does not disclose the details of the engine nor the compressor configuration. Coffinberry is cited to show that it is old and well known in the art to employ a core engine having a high pressure compressor 20 with compressed air 56 (Fig. 1) drawn from the high pressure compressor, the high pressure compressed air used to drive the air turbine 50 connected to a gearbox 48 and accessories 62. It would have been obvious to one of ordinary skill in the art to employ the compressed air from the high pressure compressor of a gas turbine core engine, as taught by Coffinberry, as a conventional engine location and engine configuration used in the art for producing the compressed air used to drive an air turbine. It is noted that the electric

controller was regarded as inherent, alternately using a controller to automate such functions is highly conventional in the aircraft art and would have been obvious to do to automate the requisite functions and/or reduce pilot error. Schutze teaches various aspects of the claimed invention but uses only the second electric generator rather than a first and second generator. Lampe teaches an auxiliary power system where the APU 12 drives both a first generator 28 and a second generator 22 which produce greater amounts of electricity and/or allows for selective operation of a generator than a single generator. Furthermore, in the time since Schutze 1978 patent, the aircraft electric demands have substantially increased with greater use of electronics onboard the aircraft for the pilot and passengers. It would have been obvious to one of ordinary skill in the art to employ a first and second generator on the gearbox of Schutze, as taught by Lampe, to produce greater amounts of electricity and/or selective operation of the generators and/or to provide backup electrical power. For instance, the first generator can be placed on the same shaft as pump 6 of Schutze and thus be designated the first generator. The first generator is connected to the shaft via a gear 11, the first generator generating electrical power from the mechanical shaft power drawn from the core engine via the shaft; wherein the second generator 7 is connected to an air turbine 12 via a gear 9, the air turbine 12 generating mechanical power from the compressed air, and the second generator 12 generating electrical power from the mechanical power generated by the air turbine. The electrical power generator further includes first generator on shaft of 6 with first gear 10 and a second generator 7 connected to an air turbine 12 via a second gear 9,

the air turbine 12 generating mechanical power from the compressed air, and the second generator 7 generating electrical power from the mechanical power generated by the air turbine; further comprising a freewheel/override clutch 14 assigned to the second gear 11 which cooperates with the air turbine; wherein the first and second generators are connectable to one another via a controllable clutch [note that Lampe would teach using a controllable clutch 16], the first and second generators being driven in an upper load range of the core engine exclusively by the shaft 2 is a natural extension of the teachings of Schutze where the generator 7 is driven exclusively by the shaft; wherein the first and second gears 10, 11 are connected to one another via the controllable clutch and the freewheel 14 decouples the air turbine. The second generator 7 is driven by the air turbine in the lower load range (startup) and via the shaft 2 in the higher load range.

7. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Leeson combination as applied above, and further in view of Austin (3,514,945). Leeson teaches a controller (e.g. 39) disconnecting and connecting the electrical power generator from the compressed air 21 by controlling the air bleed 42. Leeson does not teach that maintains a predetermined surge limit margin. Austin teaches an accessory where the air bleed from the compressor 39 is controlled by controlling the air bleed so that an operating characteristic curve of the gas turbine maintains a predetermined surge range limit margin (see Figs. 2 & 3 and col. 4, lines 53+). It would have been obvious to one of ordinary skill in the art to employ the controller to control the compressed air, to



maintain a predetermined surge limit margin, as taught by Austin, in order to prevent compressor surge and/or optimize performance.

***Allowable Subject Matter***

8. Claims 33, 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments filed 11/28/2008 have been fully considered but they are not persuasive because they rely on indefinite claim limitations.

10. Applicant's arguments concerning the Schutze and Lampe combination are not persuasive. Applicant ignores the fact that the Shutze's second generator performs all the claimed functions, as addressed above. Applicant's arguments concerning Lampe are misdirected arguing only that the APU 12 is started by the PMG 22 driving only one generator 28. This assertion is clearly false, the PMG 22 is a Permanent Magnet Generator and generates electricity (col. 3, lines 14-20 and last line of the abstract clearly teaches "...and the clutch is engaged after the turbine is started to provide rotational power to the coupled electric generators and pumps." Hence, it is clear that both generator 28 and the Permanent Magnet Generator (PMG) 22 are both driven.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The

Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax number for the organization where this application is assigned is  
571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff, can be reached at 571-272-6778. Alternate inquiries to Technology Center 3700 can be made via 571-272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>

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/Ted Kim/	Telephone	571-272-4829
Primary Examiner	Fax (Regular)	571-273-8300
January 16, 2009	Fax (After Final)	571-273-8300
Technology Center 3700	Telephone	571-272-3700

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Application Number  
10/580,743



U.S. DEPARTMENT OF COMMERCE  
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## EXAMINER'S CASE ACTION WORKSHEET

<b>Copy</b> (Ctrl+C)	Palm Transaction Code		Legal Instrument Examiner
	1322 72457374110580743		

CHECK TYPE OF ACTION

DATE OF COUNT

<input checked="" type="checkbox"/> Non-Final Rejection	<input type="checkbox"/> Restriction/Election Only	<input type="checkbox"/> Final Rejection
<input type="checkbox"/> Ex Parte Quayle	<input type="checkbox"/> Allowance	<input type="checkbox"/> Advisory Action
<input type="checkbox"/> Examiner's Answer	<input type="checkbox"/> Reply Brief Noted	<input type="checkbox"/> Non-Entry of Reply Brief
<input type="checkbox"/> Defective Notice of Appeal	<input type="checkbox"/> Interference Disposal SPE _____ (Approval for Disposal)	<input type="checkbox"/> Suspension (Examiner-Initiated) SPE _____ (initial)
<input type="checkbox"/> Defective Appeal Brief	<input type="checkbox"/> SIR Disposal (use only after FAOM)	<input type="checkbox"/> Supplemental Examiner's Amendment
<input type="checkbox"/> Miscellaneous Office Letter (With Shortened Statutory Period Set)	<input type="checkbox"/> Notice of Non-Responsive Amendment (With One Month Time Period set)	<input type="checkbox"/> Miscellaneous Office Letter (No Response Period Set)
<input type="checkbox"/> Abandonment after BPAI Decision	<input type="checkbox"/> Supplemental Action	<input type="checkbox"/> Response to Rule 312 Amendment
<input type="checkbox"/> Letter Restarting Period for Response (e.g., Missing References)	<input type="checkbox"/> Interview Summary	<input type="checkbox"/> Authorization to Change Previous Office Action SPE: _____ (Initial)
<input type="checkbox"/> Abandonment	<input type="checkbox"/> Express Abandonment Date: _____	<input type="checkbox"/> Other

Examiner's Name: Ted Kim

AU: 3741

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,743	<b>Applicant(s)</b> KLINGELS, HERMANN	
	<b>Examiner</b> Ted Kim	<b>Art Unit</b> 3741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21,25-35 and 39-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21,25-35 and 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |